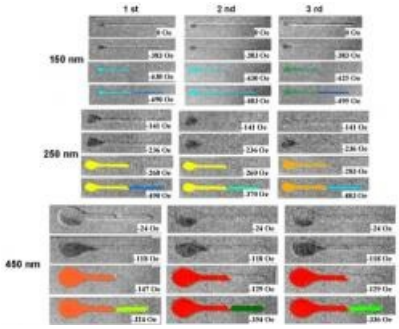
Published on *Center for X-Ray Optics* (http://www-cxro.lbl.gov)



# Direct Observation of Stochastic Domain-Wall Depinning in Magnetic Nanowires




Novel concepts for magnetic data storage are based on a precise and repeatable movement of magnetic domain walls in magnetic nanowires. A recent study with the high resolution soft X-ray microscope XM-1 revealed the stochastic character of the field-driven domain wall depinning at an artificial notch in a nanowire. An analysis of repeated images of the depinning process showed that the multiplicity of the domain wall types is responsible for the observed stochastic nature and depends on wire and notch geometry. Therefore one can control by a proper design of the nanowire the random nature of the domain wall depinning. Read the full story at M.-Y. Im et al., Phys. Rev. Lett. 102 147204 (2009) .